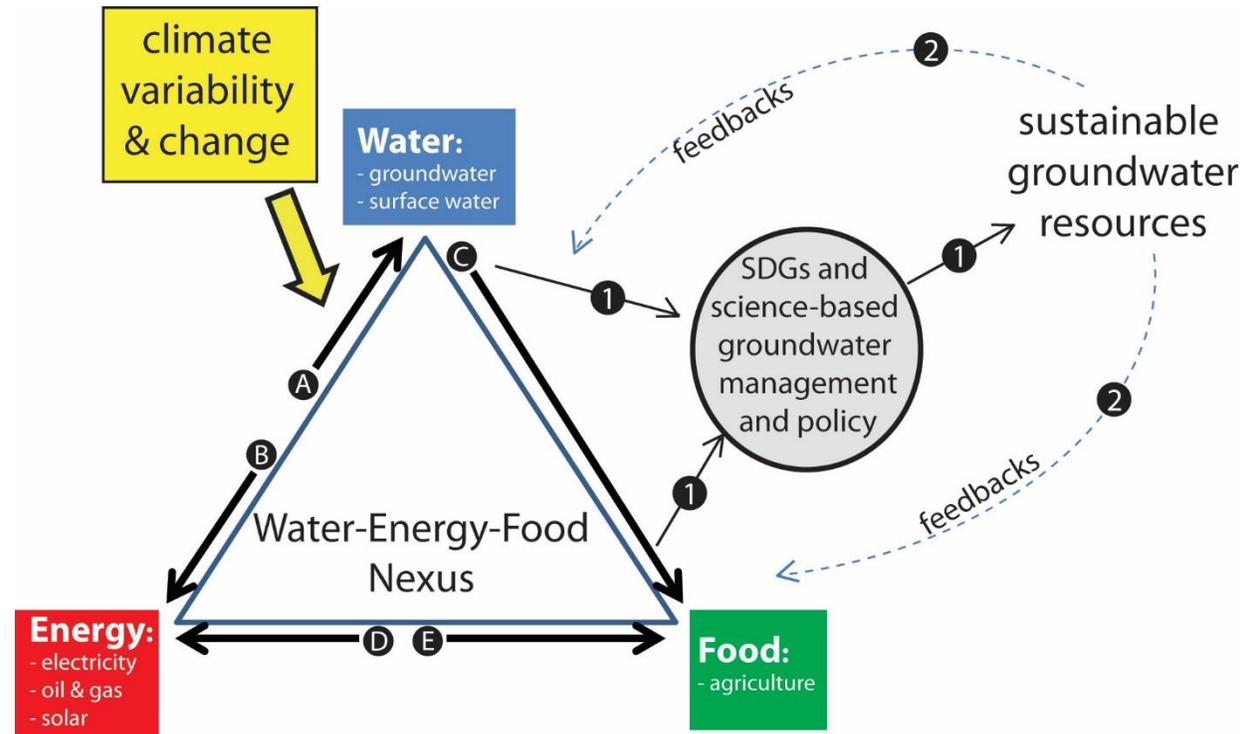


IGCP 684: The Water Energy Food and Groundwater Sustainability Nexus

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Introduction



Conceptual diagram of the Water-Energy-Food (WEF) Nexus and relationships and feedbacks with Sustainable Development Goals (SDGs) and science-based groundwater management decisions and policy choices (Gurdak, 2018). The thick, solid arrows represent the linkages (relationships) within the Nexus, and include (A) Energy for Water, (B) Water for Energy, (C) Water for Food, (D) Food for Energy, and (E) Energy for Food. The thin, solid arrows (#1) represent the impacts of WEF Nexus concepts on groundwater management and policy, and the arrows (#2) represent feedbacks of sustainable groundwater resources on the Nexus (Gurdak, 2018).

Research Question and Direct Objective

- RQ: Will hydrogeologists adopt WEF Nexus concepts and approaches to advance SDG and management of GW resources?
- Provide science to inform water management strategies by establishing a link between WEF Nexus and SDG's
- Establish a focused effort in three regions: Mediterranean, Southern Africa, and North America) to facilitate research, discussion, training and bridging knowledge gap about the WEF Nexus and Groundwater
- The project will mainly favor early career scientists, young researchers and women.

Significance

- Impact of increasing demand on GW, especially for irrigation and agricultural purposes
- Rising Influence of climate change
- A increasing urbanization and need for potable resources
- Evaluation of current needs to help support decision-making in water resources management in developing countries (monitoring and proper infrastructure are needed): lessons learnt from developed countries
- Reinstate GW as an essential component of the WEF Nexus

Work Plan

- 2019: Organization, additional Participation recruitment and Data Analysis
 - WEF- GW Nexus Project Newsletter, social media coverage, and a dedicated website
 - WEF-GW Nexus Workshop in IAH Congress in Malaga
 - Presentation of project findings in other conferences (AGU-2019: San Francisco)
- 2020: Focus California
- 2021: South African Region
- 2022: Mediterranean Region
- 2023: wrap up and continental synthesis
- Output: Publications and multiple contribution edition